



CITY OF LODI COUNCIL COMMUNICATION

AGENDA TITLE: Status Report Regarding Energy Efficiency and Conservation Block Grant Funded Projects (EUD)

MEETING DATE: September 16, 2009

PREPARED BY: Interim Electric Utility Director

RECOMMENDED ACTION: Receive a status report regarding the application for energy efficiency and conservation block grant funded projects.

BACKGROUND INFORMATION: By the end of September 2009, the City expects to receive \$586,000 in federal stimulus funds for 10 energy efficiency projects that the City Council approved on June 3, 2009.

The projects directly benefit Lodi residents, small businesses and public facilities with a rapid return on investment. These energy-efficient programs will result in annual savings of more than 2.4 million kilowatt-hours of electricity, a retail value of more than \$360,000, plus savings in fuel and labor. In addition, the energy-efficiency measures have the potential to increase rental revenue from more attractive recreation facilities.

The grants are expected to provide \$188,000 for recreation facilities, \$200,000 for computer upgrades, and \$198,000 to supplement the Lodi Electric Utility's Public Benefits program. The projects are as follows:

- **Lodi Grape Bowl Lighting Retrofit (\$100,000)** – Foot-candlefield illumination at the Grape Bowl currently is 20, the minimum recommended for high school football. The replacement lights and fixtures not only will use fewer watts, but will result in 50 foot-candles on the field, or enough lighting for college football, according to standards established by the Illuminating Engineering Society of North America. At current use levels, the lights will save about 41,000 kWh a year. The additional lighting is expected to increase field use and rental revenue.
- **Kofu Park Community Building Energy Efficiency Project (\$20,000)** – This project will save about 4,000 kWh per year and make the building more attractive for rental use through the installation of a high-efficiency HVAC unit, installation of dual-paned windows, installation of door sweeps/weather-stripping, and the installation of R-38 attic insulation.
- **Solar-Powered Trash Compaction Pilot Project (\$53,000)** – This unique and innovative pilot project involves the purchase and installation of 20 solar-powered trash compacting garbage cans to install in City parks, Downtown, and other heavily used areas. Benefits are several. Less-frequent trash collections will save an estimated 600 gallons of fuel and labor costs, as well as keep parks cleaner with less trash spilling from overstuffed cans, especially on holiday weekends.

APPROVED:

A handwritten signature in black ink, appearing to read "Blair King", written over a horizontal line.

Blair King, City Manager

- **Community Center Energy Management System Retrofit (\$15,000)** – This new energy management system software package will replace the now-defunct management system. The software will allow Community Center employees to operate the facility's HVAC system more efficiently, and adjust it as needed from a remote location. Energy savings are estimated at 28,000 kWh annually.
- **Lodi Computer Server Energy Efficiency Project (\$200,000)** – Computer server rooms reach a temperature of 100 degrees within an hour without constant air conditioning. Not only will this project replace 25 computer servers with eight to 10 high-efficiency computer servers, resulting in fewer plugs in outlets, but it will require far less around-the-clock cooling for an estimated annual savings of 175,000 kWh.
- **Lodi Keep Your Cool (\$25,000)** – Involves the installation of new refrigeration door gaskets at restaurants, mini-markets, small grocery stores, beverage stores, doughnut shops, etc. The \$25,000 doubles the Electric Utility's current Keep Your Cool allocation. In this program, a contractor visits Lodi businesses to inform them of the program and, if the business agrees, the contractor installs the energy-efficient door gaskets with payment from the utility. Thirteen recently completed projects will save approximately 270,000 kWh of electricity each year, and the additional funds are expected to save a similar amount of energy.
- **Lodi Lodging Energy Efficiency Pilot Project (\$48,000)** – Replacing incandescent bulbs with fluorescent lighting, rebates for HVAC improvements and installing controls that automatically turn off air conditioning in vacant rooms is the aim of this program targeting hotels and motels in Lodi. Energy savings are unknown at this time and depend on the programs chosen by lodging owners.
- **Lodi Low-Income Customer Refrigerator Replacement Program (\$50,000)** – Involves the removal of aging, inefficient refrigerators from the homes of low-income customers, and replacing those refrigerators with new, high efficiency refrigerators; Currently \$70,000 is budgeted within the utility's Public Benefits fund for this program, administered by San Joaquin County. These federal stimulus funds add another \$50,000 to the refrigerator replacement project. The additional funds will pay for a new refrigerator as well as the cost of hauling off and recycling the aging one. New refrigerators will save 300 to 400 kilowatt hours a year, for a savings of up to 25,000 kWh annually.
- **Lodi Cool the Earth Educational Pilot Project (\$25,000)** – This is an educational/outreach pilot program designed for students in grades K-6 at Lodi school sites. This interactive and engaging program teaches students about energy/water conservation, renewable energy and sustainable living practices. About 15 school sites can participate in the program based on the grant, with Cool the Earth estimating a savings of 150,000 kWh in the homes of each school's students.
- **Lodi Energy Efficient Home Improvement Rebate Program (\$50,000)** – This enhances an existing program within the utility. The requested federal funds will be used to enhance rebates to Lodi residential customers who pursue specific energy conservation measures, including upgrading attic/wall insulation, installing whole house and/or attic fans, installing radiant barriers/thermal shield roofing materials, installing shade screens/window tinting, and/or installing a high-efficiency central air conditioner and repairing/replacing air ducts. Savings will depend on customer demand.

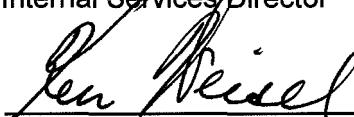
Once the City's application receives final approval, the City should be able to draw funds electronically. At that point, the City Council will be asked to appropriate funds consistent with the City's procurement rules.

FISCAL IMPACT: The City of Lodi will receive \$586,000 to implement and complete these energy efficiency and conservation projects. Over time, the City, its residents and businesses will reap the benefit of reduced energy costs, as well as maintenance and operational costs.

FUNDING: The various projects outlined in this staff report will be funded via the American Recovery and Reinvestment Act of 2009 (the federal economic stimulus bill). In addition, \$315,000 in funding will be provided to either complete or supplement the list of 10 projects listed above from City of Lodi accounts (Lodi Public Benefits Program fund and Parks & Recreation). These local or matching funds have been budgeted as part of the City's FY 2009/10 budget.



Jordan Ayers
Deputy City Manager/Internal Services Director



Ken Weisel
Interim Electric Utility Director

PREPARED BY: Rob Lechner, Manager, Customer Service & Programs

KAW/RSL/lt

Status Report Energy Efficiency and Conservation Block Grant

September 16, 2009

ARRA

- American Recovery and Reinvestment Act
- Economic Stimulus
- Energy Efficiency and Conservation Block Grant: \$586,000 for Lodi Projects
- Funds this Federal Fiscal Year?
(by Sept 30)
- Lodi matching funds \$315,000 in Public Benefits and Parks & Recreation budgets

Lodi Grape Bowl Lighting Retrofit (\$100,000)

- Save about 41,000 kWh per year
- Replace 20 foot-candles with 50 foot-candles on the field
- Meet Illuminating Engineering Society of North America standards for college football
- Additional lighting is expected to increase field use and rental revenue.

Kofu Park Community Building Energy Efficiency Project (\$20,000)

- Save about 4,000 kWh per year
- Install a high-efficiency HVAC unit
- Install dual-paned windows
- Install door sweeps/weather-stripping
- Install R-38 attic insulation.
- Make the building more attractive for rental use

Community Center Energy Management System Retrofit (\$15,000)

- Save about 28,000 kWh per year
- Allow Community Center staff to operate the HVAC system more efficiently
- Adjust as needed from a remote location

Lodi Computer Server Energy Efficiency Project (\$200,000)

- Save about 175,000 kWh per year
- Replace 25 computer servers with eight to 10 high-efficiency computer servers
- Far less around-the-clock cooling
- Fewer plugs in outlets

Lodi Keep Your Cool (\$25,000)

- Save about 270,000 kWh per year
- Install new refrigeration door gaskets at restaurants, mini-markets, small grocery stores, beverage stores, doughnut shops, etc
- Add funds to existing program

Lodi Lodging Energy Efficiency Pilot Project (\$48,000)

- Replace incandescent bulbs with fluorescent lighting
- Provide rebates for HVAC improvements and automatic air conditioning controls in vacant hotel/motel rooms.
- Energy savings depend on lodging owner choices

Low-Income Customer Refrigerator Replacement Program (\$50,000)

- Save up to 25,000 kWh per year
- Replace aging, inefficient refrigerators of low-income customers with new, high efficiency refrigerators
- Haul off and recycle the aging refrigerators
- Administered by San Joaquin County
- Add funds to existing program

Lodi Cool the Earth Educational Pilot Project (\$25,000)

- Save 150,000 kWh in students' homes per school per year
- For 15 Lodi schools K-6 students
- Teaches energy/water conservation, renewable energy, and sustainable living practices

Lodi Energy Efficient Home Improvement Rebate Program (\$50,000)

- Enhance rebates to Lodi residential customers for specific energy conservation measures
- Upgrade attic/wall insulation
- Install whole house and/or attic fans
- Install radiant barriers/thermal shield roofing materials
- Install shade screens/window tinting
- Install high-efficiency central air conditioner
- Repair/replace air ducts.
- Savings will depend on customer demand.
- Adds funds to existing program

Solar-Powered Trash Compaction Pilot Project (\$53,000)

- Purchase 20 solar-powered compacting trash cans and install in City parks, Downtown, and other heavily used areas
- Less-frequent trash collections: save about 600 gallons of fuel per year and labor costs
- Keep parks cleaner: less trash spilling from overstuffed cans, especially on holiday weekends



Solar-powered trash cans

Lodi City Council

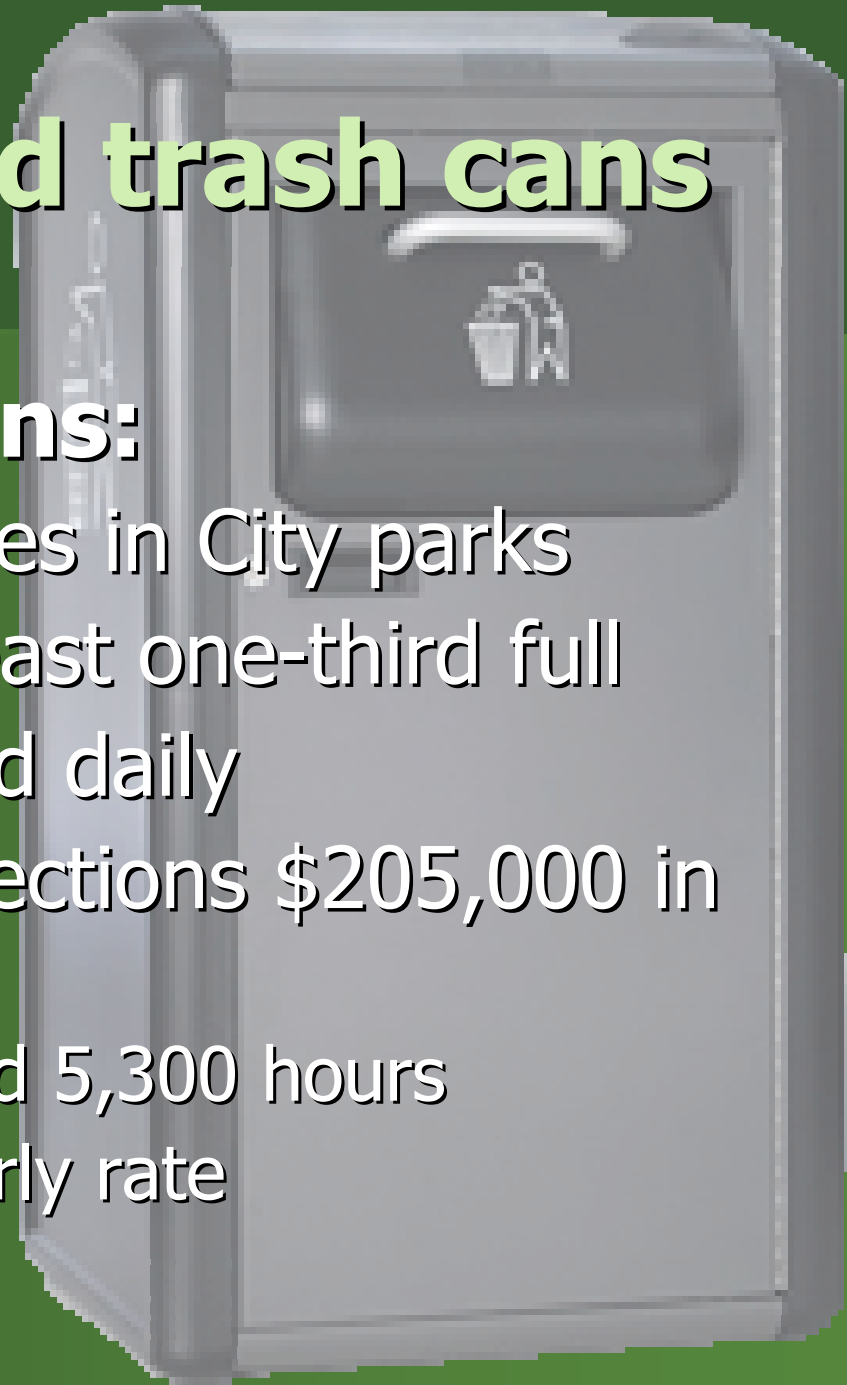
Sept. 16, 2009



Solar-powered trash cans

Current operations:

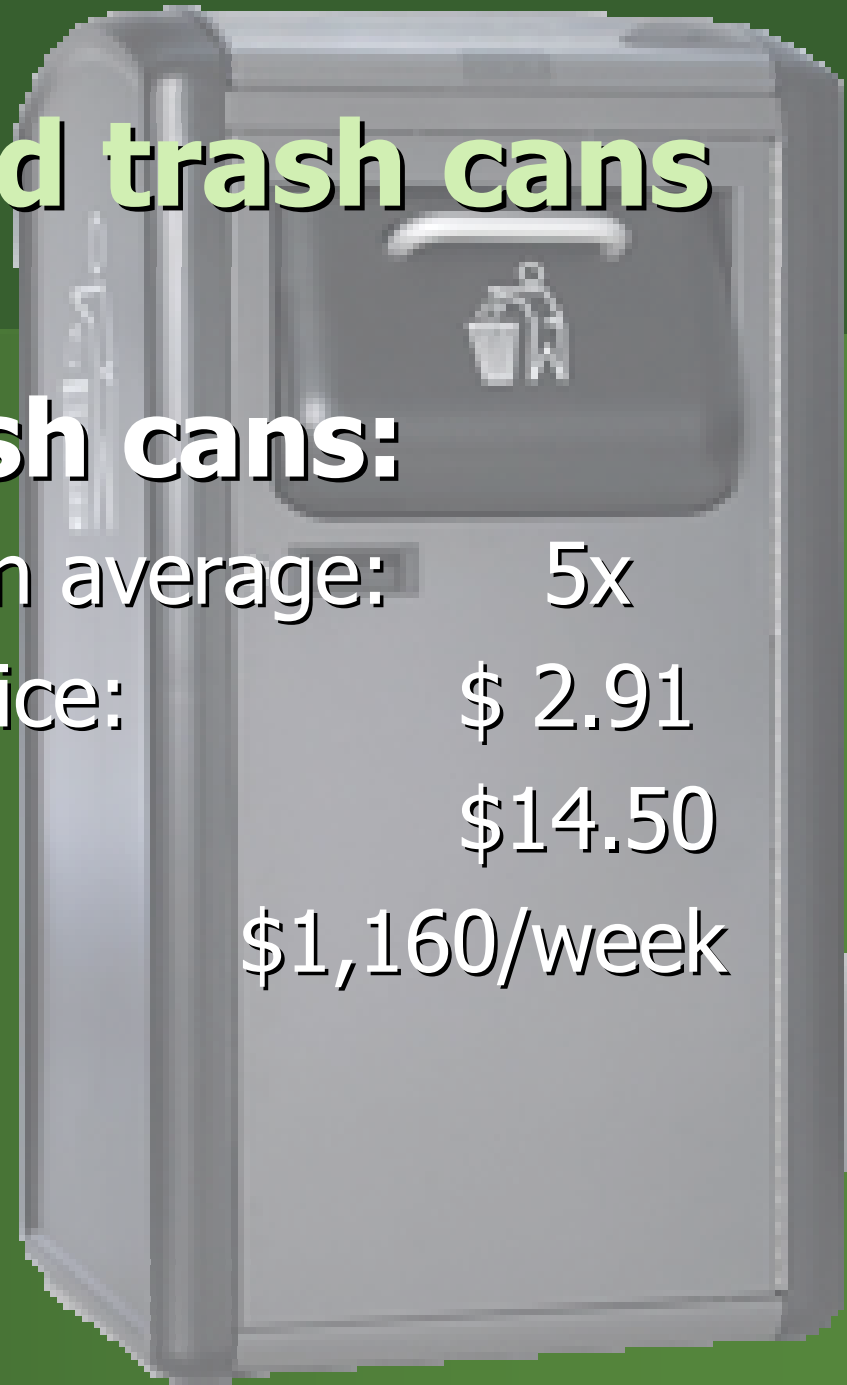
- 315 trash receptacles in City parks
- Emptied when at least one-third full
- All cans are checked daily
- Labor costs for collections \$205,000 in FY08/09
 - 13 field staff expend 5,300 hours
 - Fully burdened hourly rate



Solar-powered trash cans

Traditional trash cans:

- Service per week on average: 5x
- Labor cost per service: \$ 2.91
- Total cost/week: \$14.50
- Cost of 80 cans \$1,160/week



Solar-powered trash cans

Plan for solar-powered cans

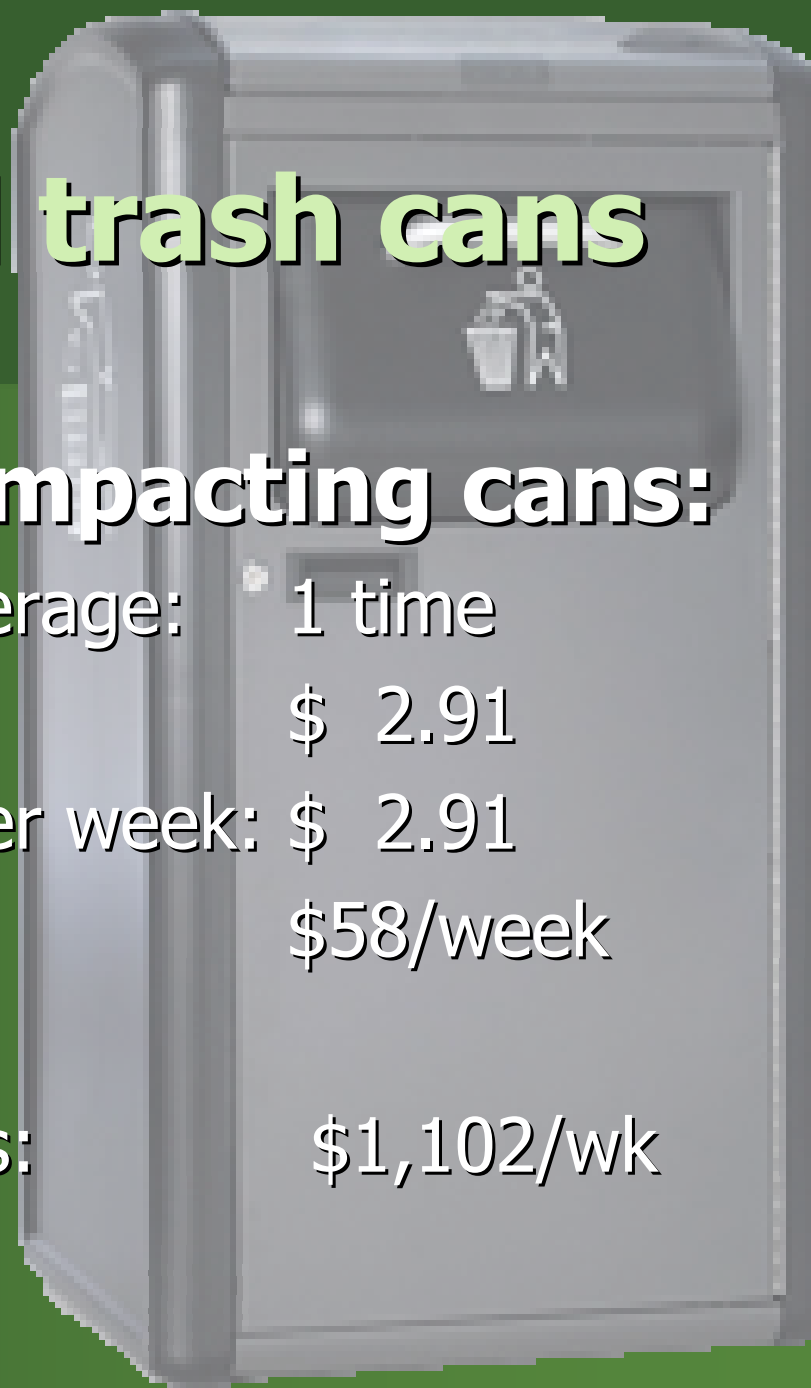
- Use 20 to replace 80 traditional cans in City parks
 - Research shows visitors seek out compactors to dispose of trash
 - No overflowing cans



Solar-powered trash cans

Solar-powered compacting cans:

- Service per week on average: 1 time
- Labor cost per service: \$ 2.91
- Total cost per service per week: \$ 2.91
- 20 cans' costs \$58/week
- Cost savings vs. 80 cans: \$1,102/wk



Solar-powered trash cans

Estimated labor savings:

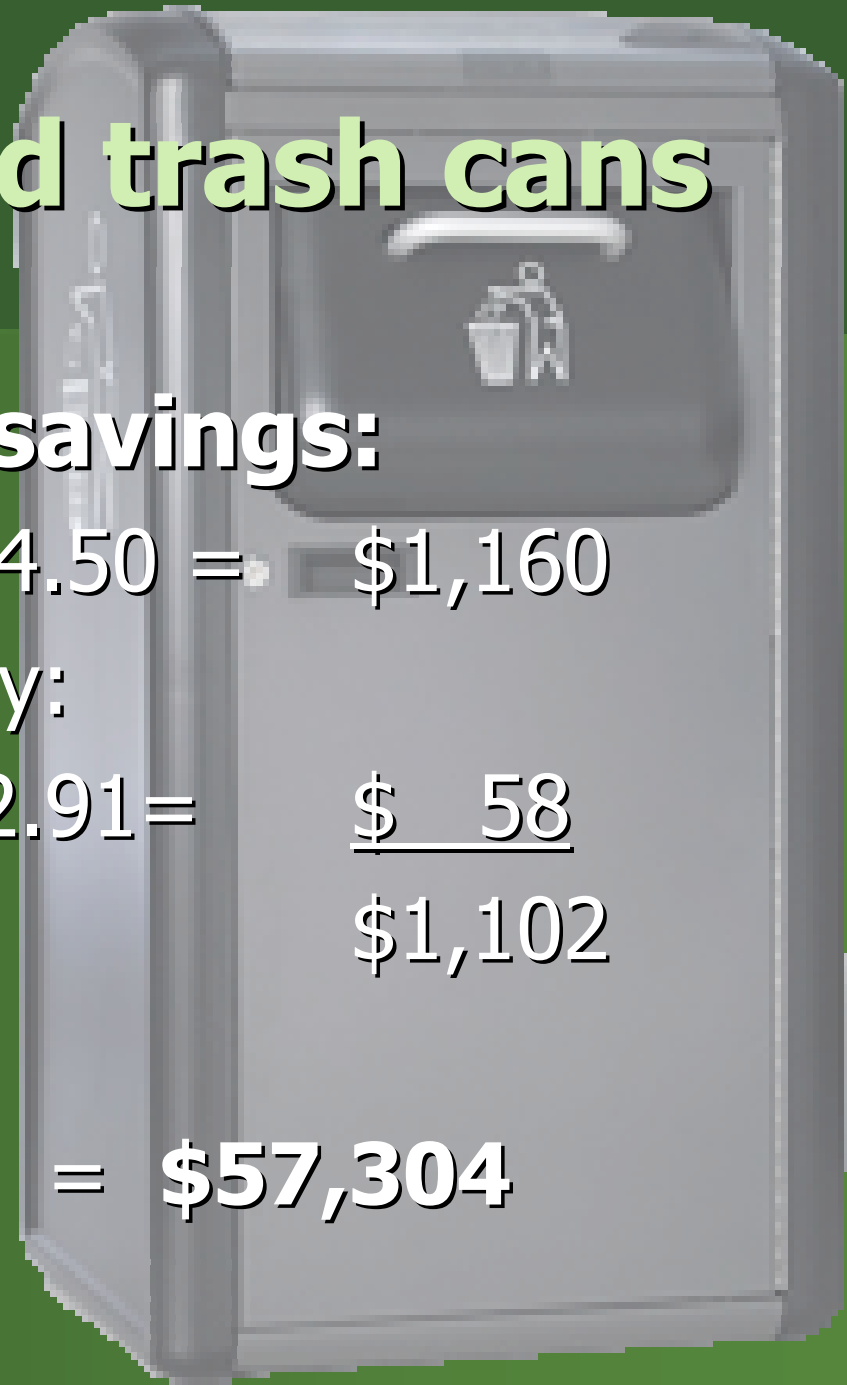
- 80 trash cans x \$14.50 = \$1,160

Replaced by:

- 20 trash cans x \$ 2.91 = \$ 58

Weekly savings: \$1,102

\$1,102 x 52 Weeks = **\$57,304**

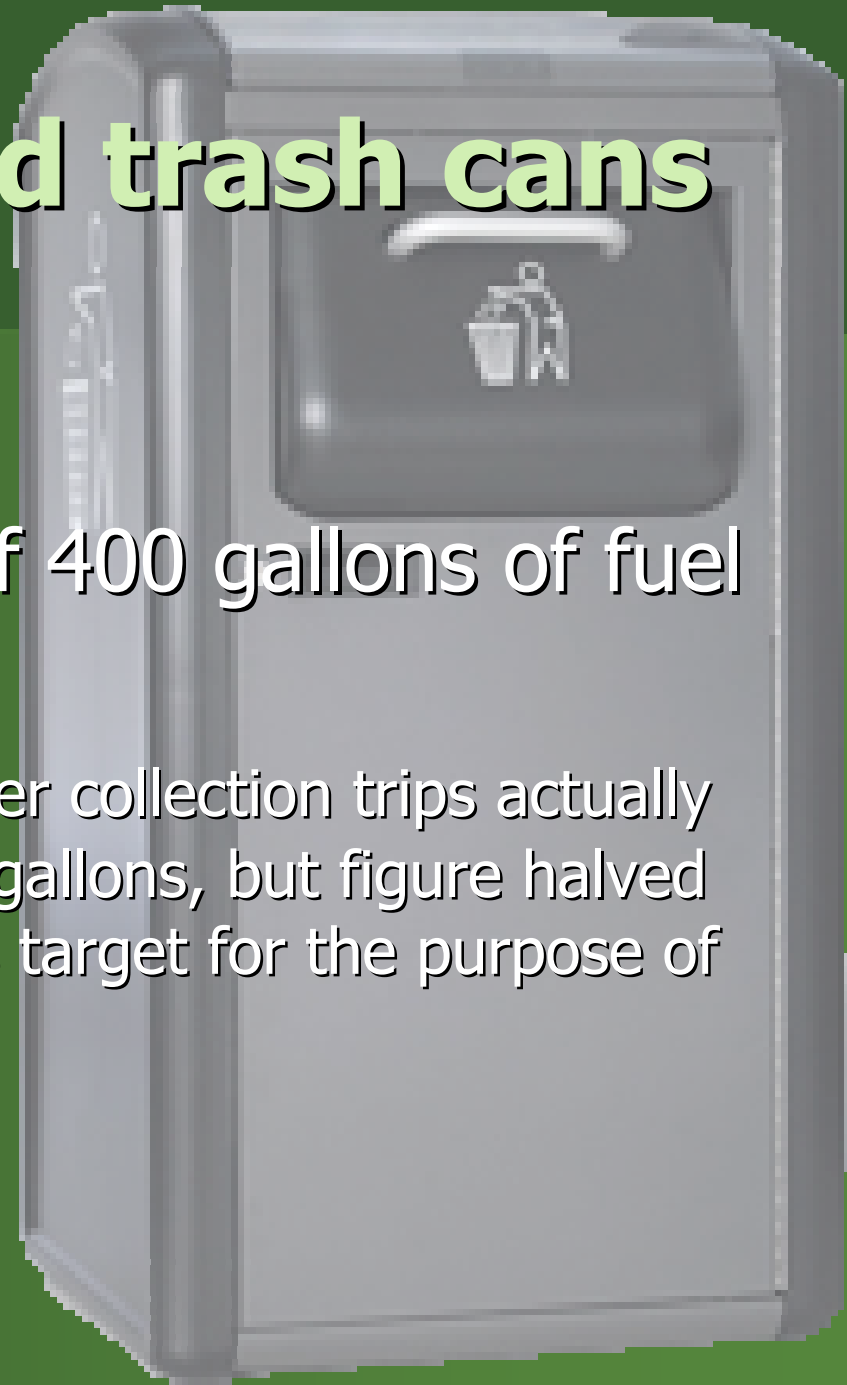


Solar-powered trash cans

Other savings

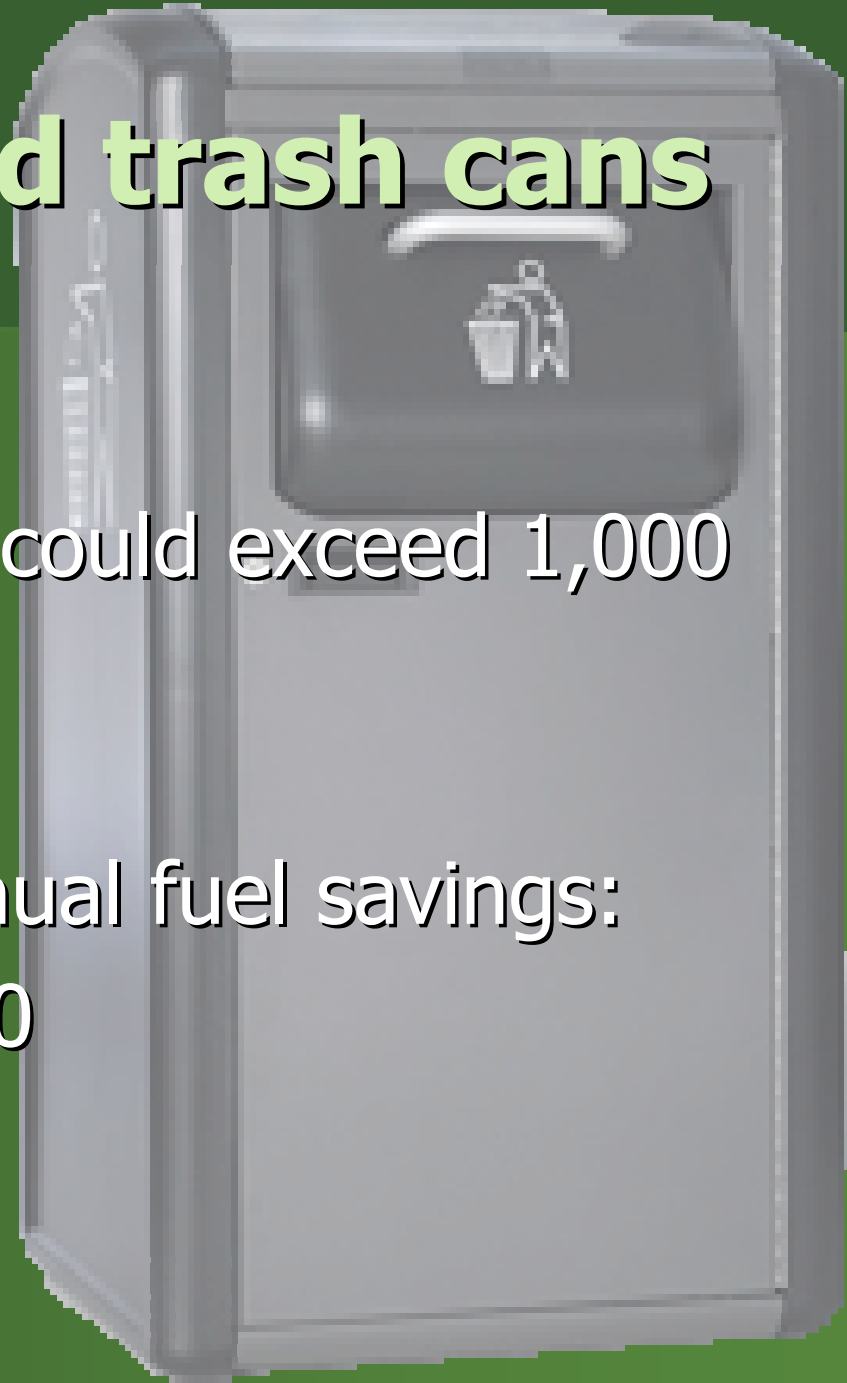
- Minimum savings of 400 gallons of fuel each year.

Note: 25-percent fewer collection trips actually saves approximately 800 gallons, but figure halved for attainable fuel savings target for the purpose of the grant.



Solar-powered trash cans

- Actual fuel savings could exceed 1,000 gallons/year
- Base estimated annual fuel savings:
\$1,200



Solar-powered trash cans

Summary

■ Labor cost savings:

\$57,304

■ Fuel savings:

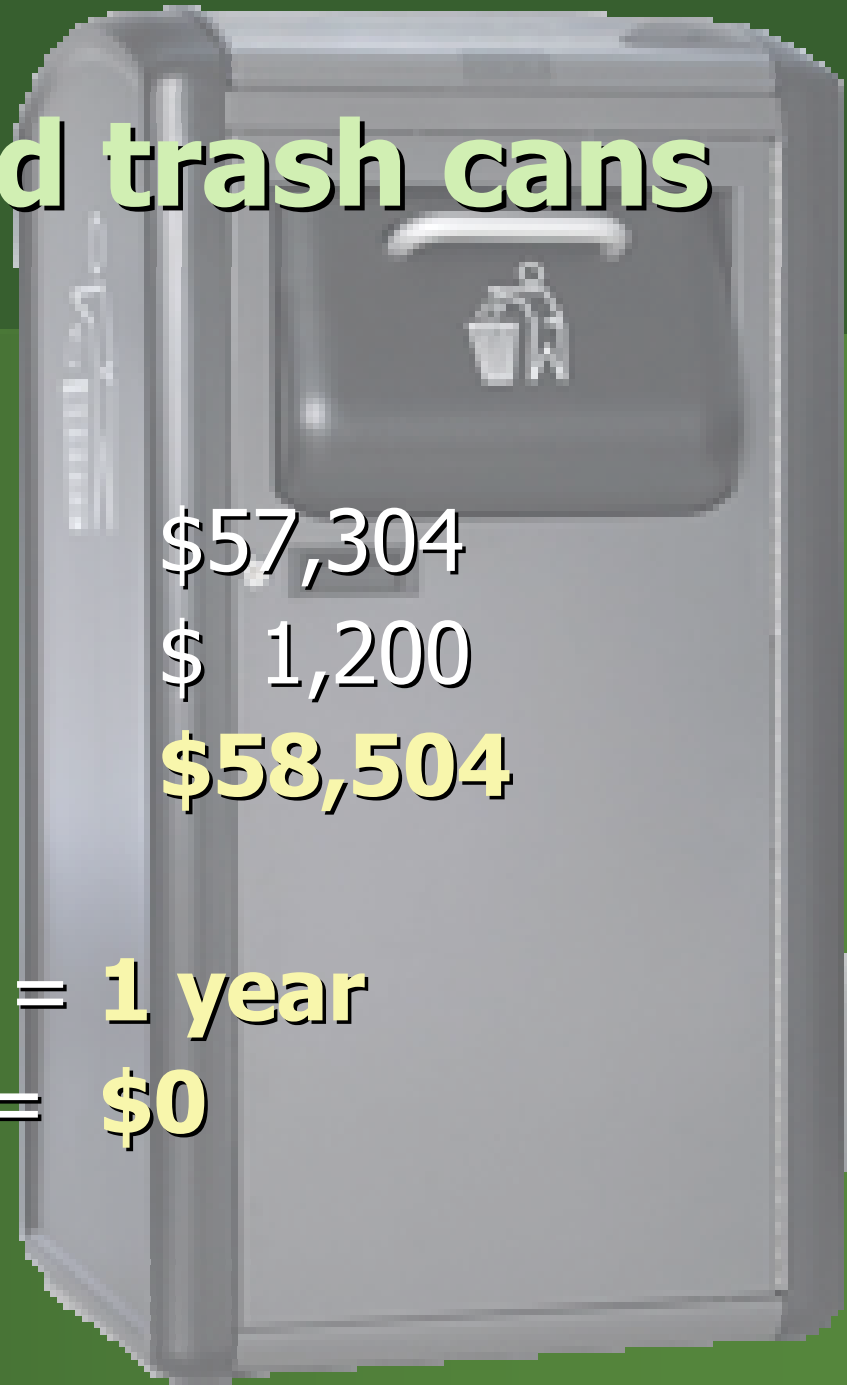
\$ 1,200

Total savings

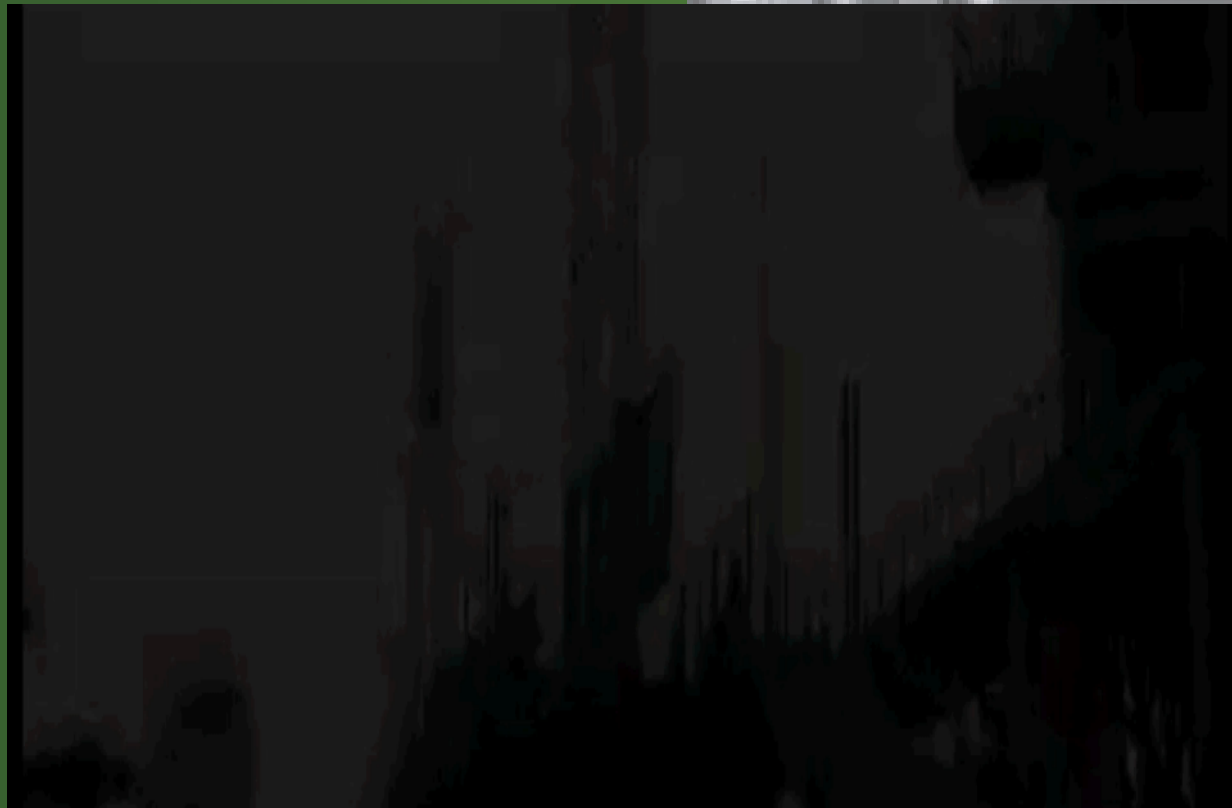
\$58,504

Capital cost recovery = **1 year**

Actual capital outlay = **\$0**



Solar-powered trash cans



The BigBelly Solar Trash Can

A Quick FAQ:

Question: Will people hurt themselves dumping heavier trash receptacles?

Answer: Compacted weights of trash once the can is full will vary from 35-45lbs. The current lifting requirement for staff is 75lbs.

Question: Will they be more prone to vandalism?

Answer: The receptacles are made with a poly-carbonate shield – the same as bulletproof glass. In other cities they have not had a history of being vandalized.

Question: Can hands or fingers get trapped?

Answer: The trash collection hopper prevents hand from reaching into the compaction area. The unit is locked and will not operate when the front or top doors are open.

Question: Can it work in the fog or a shady location?

Answer: The BigBelly does not require direct sunlight. As long as the unit's solar panel can "see" the sky it can operate.

Question: How reliable is the BigBelly?

Answer: A New York case study found 99.8% up time in heavy-use and demanding environments.

Question: Is there a warranty?

Answer: Standard warranty is 4 years.